

Application No.: 10/511529

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Docket No.: 05587-00371-US

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Meinhard Gusik et al.

Application No.: 10/511529

Group Art Unit: N/A

Filed: October 15, 2004

Examiner: Not Yet Assigned

For: FILLED PELLETIZED MATERIALS MADE
FROM HIGH- OR ULTRAHIGH-
MOLECULAR-WEIGHT POLYETHYLENES
AND PROCESS FOR THEIR PRODUCTION

**TRANSMITTAL OF TRANSLATION OF INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

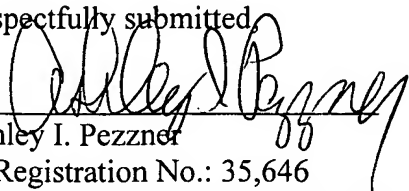
Dear Sir:

Enclosed is the following item for filing in connection with the above-referenced Patent Application:

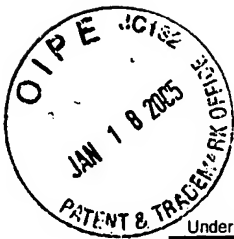
1. Translation Of The International Preliminary Examination Report.

The Director is hereby authorized to charge any deficiency in the fees filed, asserted to be filed or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our Deposit Account No. 03-2775, under Order No. 05587-00371-US.

Respectfully submitted,

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Application No. (if known): 10/511529

Attorney Docket No.: 05587-00371-US

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Transmittal Of Translation Of The International Preliminary Examination Report

PCT

(PCT Rule 72.2)

To:

TICONA GMBH
Patent- und Lizenzabteilung
Professor-Staudinger-Strasse
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ALLEMAGNE

Date of mailing (<i>day/month/year</i>) 09 December 2004 (09.12.2004)	
Applicant's or agent's file reference 2002/G006	IMPORTANT NOTIFICATION
International application No. PCT/EP2003/003903	International filing date (<i>day/month/year</i>) 15 April 2003 (15.04.2003)
Applicant <div style="text-align: center;">TICONA GMBH et al</div>	

- ϕ Anwältin!

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- It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned (Rule 74.1). See Volume II of the PCT Applicant's Guide for further details.**

Ellen Moyse

Facsimile No.+41 22 338 89 75

Translation

PATENT COOPERATION TREATY

PCT/EP2003/003903



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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 2002/G006	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/EP2003/003903	International filing date (day/month/year) 15 April 2003 (15.04.2003)	Priority date (day/month/year) 18 April 2002 (18.04.2002)
International Patent Classification (IPC) or national classification and IPC B29B 9/12, B29B9/12		
Applicant TICONA GMBH		

<p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>9</u> sheets, including this cover sheet.</p> <p><input checked="" type="checkbox"/> This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of <u>4</u> sheets.</p>	
<p>3. This report contains indications relating to the following items:</p> <p>I <input checked="" type="checkbox"/> Basis of the report</p> <p>II <input type="checkbox"/> Priority</p> <p>III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p>IV <input type="checkbox"/> Lack of unity of invention</p> <p>V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p>VI <input type="checkbox"/> Certain documents cited</p> <p>VII <input type="checkbox"/> Certain defects in the international application</p> <p>VIII <input type="checkbox"/> Certain observations on the international application</p>	

Date of submission of the demand 08 November 2003 (08.11.2003)	Date of completion of this report 11 February 2004 (11.02.2004)
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

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I. Basis of the report

1. With regard to the elements of the international application:*

- ☐ the international application as originally filed
- ☒ the description:
pages 1-10, 12, as originally filed
pages _____, filed with the demand
pages 11,13, filed with the letter of 14 January 2004 (14.01.2004)
- ☒ the claims:
pages _____, as originally filed
pages _____, as amended (together with any statement under Article 19
pages _____, filed with the demand
pages 1-5, filed with the letter of 14 January 2004 (14.01.2004)
- ☐ the drawings:
pages _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____
- ☐ the sequence listing part of the description:
pages _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language _____ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☒ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☒ the claims, Nos. 6-10
- ☐ the drawings, sheets/fig _____

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

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V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims		YES
	Claims	1	NO
Inventive step (IS)	Claims		YES
	Claims	2-5	NO
Industrial applicability (IA)	Claims	1-5	YES
	Claims		NO

2. Citations and explanations

1. PRIOR ART

Reference is made to the following documents D1 to D11:

D1: EP-A1-0 690 095
D2: EP-A1-0 590 507 (applicant)
D3: US-A-5 948 557
D4: US 2002/010241 A1
D5: EP-A2-0 315 481
D6: US-A-5 055 248
D7: US-A-4 853 427
D8: EP-A1-0 472 237
D9: EP-A2-0 889 087 (applicant)
D10: US-A-5 352 732 (applicant)
D11: US-A-4 973 626

2. NOVELTY [PCT Article 33(2)], INVENTIVE STEP [PCT Article 33(3)]

2.1 Irrespective of the lack of clarity referred to in point 4 of this report, the subject matter of amended independent claim 1 in the version of 9 January 2004 is not novel (PCT Article 33(2)).

D2, which is still considered the closest prior art, discloses (the references in parentheses relate to said document) a method for the production of granules containing polyethylene of high and/or ultra-high molecular weight and fillers and/or reinforcing materials, by means of an extruder (abstract; column 1, lines 1 to 5),

- the screw of which is divided into a feed zone, a transition zone and a metering zone (figure; claim 1),

comprising the steps:

- (a) feeding powdered to small-particle HMW polyethylene and/or UHMW polyethylene and fillers and/or reinforcing materials into the feed zone (column 3, lines 1 to 18), [...],
- (b) conveying the HMW polyethylene and/or UHMW polyethylene and the filler and/or reinforcing material through the feed zone by means of the screw (column 3, line 18),
- (c) conveying the HMW polyethylene and/or UHMW polyethylene and the filler and/or reinforcing material into the transition zone by means of the screw (column 3, lines 35 to 37), [...],
- (d) conveying the HMW polyethylene and/or UHMW polyethylene and the filler and/or reinforcing material into the metering zone by means of the screw (column 4, lines 1 to 3), [...],

(e) conveying the HMW polyethylene and/or UHMW polyethylene and the filler and/or reinforcing material through a die of specified geometry by means of the screw, forming at least one strand of the extrudate (column 5, line 57 to column 6, line 8), and

(f) pelletising the at least one strand of the extrudate [...] (column 6, lines 8 to 12),

characterised in that,

- at least in the transition zone, the screw is designed as a barrier screw (figure; column 3, lines 35 to 49; column 6, lines 19 to 21; claims 1 to 3).

The subject matter of amended **claim 1** is not novel (PCT Article 33(2)).

It should also be observed that, while the term "barrier screw" is not explicitly used in D2, the extruder screw shown in the only D2 figure is indeed a barrier screw: upstream of the barrier, pressure builds up in the material to be extruded and, in the barrier region itself, the narrowing of the flow channel inevitably produces high shear rates in the material. According to D2, this shear region (D2: reference sign "3") is associated with the transition zone (cf. also D2: column 3, lines 35 to 39).

Furthermore, although the addition of processing aids, fillers and/or reinforcing materials, e.g. for the production of extruded polyethylene moulding

compounds, is not *explicitly* described in D2, the addition of these materials is an absolutely conventional measure (cf., for example, D1: page 4, lines 34-47) which a person skilled in the art carries out in an obvious manner and which can therefore be regarded as *implicitly* disclosed in D2.

2.2 Irrespective of the lack of clarity referred to in point 4 of this report, **claims 2 to 5** in the amended version contain no features which, in combination with the features of any claim to which they refer back, meet the PCT requirements with regard to novelty and inventive step. For example, the following features of the claims indicated are disclosed by the documents listed (references in parentheses relate to the document concerned):

- claim 2: "UHMW polyethylene" - D1 (page 4, line 37),
- claim 3: "fillers and/or reinforcing materials" - D1 (page 2, lines 41, 42; page 4, lines 39, 40); D3 (column 2, line 32: "filler particles 20 to 60% by weight"; column 7, lines 5 to 44); D4 (paragraphs 28, 29); D5 (page 6, lines 11 to 38),
- claim 4: "type of fillers and/or reinforcing materials" - D1 (page 4, lines 39 to 47); D3 (column 7, lines 5 to 44); D4 (paragraphs 28, 29); D5 (page 6, lines 11 to 38),
- claim 5: "type of fillers and/or reinforcing materials" - D1 (page 2, lines 12 to 15; page 4, lines 39 to 47); D3 (column 7, lines 5 to 44); D4

(paragraphs 28, 29); D5 (page 6, lines 11 to 38).

3. INDUSTRIAL APPLICABILITY [PCT Article 33(4)]

The PCT Contracting States do not have uniform criteria for assessing the industrial applicability of claims 1 to 5 in their present amended form. Patentability may also depend on the wording of the claims. In the present case industrial applicability is established since, in the opinion of this Authority, the claimed subject matter does not fall under PCT Rule 67.1(i) to (vi).

4. Other observations

4.1.1 Some of the features in the amended method claim 1 relate to features of a device, cf.

- "(a) ... consisting of ... the length of which is 2 to 16 times the screw diameter, and a decompression section, the length of which is 5 to 8 times the screw diameter, and the screw of which has a flight depth of 4 to 10 mm in the region comprising the feed zone",
- "(c) ... which consists of a shear section, the length of which is 1 to 6 times the screw diameter",
- "(d) ... which comprises a mixing section, the length of which is 1 to 4 times the screw diameter".

Said features do not relate to the definition of the method by means of process steps.

Contrary to the requirements of PCT Article 6, the intended restrictions are not therefore clear from the claim.

- 4.1.2 Furthermore, the method defined in claim 1 essentially amounts to nothing more than "feeding" and "conveying" HMW polyethylene and/or UHMW polyethylene through different process areas (see process steps (a) to (e) in claim 1). In other words, its features relate more to a method for the use of such an extrusion device than a method for the production of granules. It is not, however, apparent from the wording of the claim how granules are in fact ultimately produced from the starting materials via any possible intermediates.

Contrary to the requirements of PCT Article 6, the intended restrictions are not therefore clear from the claim.

- 4.2 The features defined in the amended dependent method claims 2 to 5 relate to technical features of a product and not to the definition of the method by means of method steps.

Contrary to the requirements of PCT Article 6, the intended restrictions are not therefore clear from these claims.

- 4.3 Pursuant to PCT Rule 10.2, the terminology and signs are to be consistent throughout the application.

This requirement has not been satisfied, owing to the use of the phrases "fillers and/or reinforcing materials" (here used in the 'plural', cf. claim 1, line 7) and "the filler and/or reinforcing material" (here used in the 'singular', cf. claim 1, lines 15, 17, 21 and 25) for the same feature.

As a result, the subject matter of amended claim 1 is not clearly defined (PCT Article 6).

- 4.4 The phrase "in a manner known *per se*" used in claim 1, step (f) and on page 6, lines 22, 23, of the description is vague and unclear and leaves the reader uncertain as to the meaning of the technical features in question.

As a result, the subject matter of amended claim 1 is not clearly defined (PCT Article 6).

- 4.5 The terms "reinforcing materials" and "reinforcing agents" used in amended claim 4 are vague and unclear. They leave the reader uncertain as to the meaning of the technical features in question, since it does not become clear how a "reinforcing material" is actually supposed to differ from a "reinforcing agent" in terms of features and material properties.

The subject matter of claim 4 is therefore not clearly defined (PCT Article 6).

- 4.6 The meaning of the phrase "fillers and/or reinforcing materials" used in amended claim 5 (see also claims 3 and 4) is vague and unclear, since fillers and/or reinforcing materials appear to be

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selected from a common group of examples (see claim 5). The reader remains uncertain as to the meaning of the technical features in question, since it does not become clear how a "filler" differs from a "reinforcing material" in terms of features and material properties (cf. also in this connection page 4, line 28 to page 5, line 11 of the description) (PCT Article 6).

- 4.7 The citation "DE-A-43210351" on page 3, line 18, of the description should be replaced by the correct citation "DE-A-4210351". Contrary to the requirements of PCT Rule 66.8(a) (cf. also PCT Examination Guidelines, paragraph VI-7.2), a replacement sheet to this effect has not been submitted by the applicant.
- 4.8 The description should also cite at least D1 and the relevant prior art disclosed therein (PCT Rule 5.1(a)(ii)).
